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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,748	08/28/2003	Tadashi Tsunoda	TOW-040	1773

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LAHIVE & COCKFIELD, LLP.  
28 STATE STREET  
BOSTON, MA 02109

EXAMINER
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MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/652,748

Applicant(s)

TSUNODA, TADASHI

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/04: 8/03.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 4 are rejected under 35 U.S.C. 102(a) as being anticipated by Beckmann et al., CA 2422926 A1.

Rejection of claims 1, 4 drawn to a fuel cell.

Beckmann et al., teach a fuel cell comprising a pair of separators and electrolyte electrode assemblies interposed between the separators, the assemblies each including an anode, a cathode, and an electrolyte interposed between the electrodes (sect. 0003), wherein each of the separators includes a first and second plate stacked together (sect. 0018); a fuel gas channel and an oxygen-containing channel; a first ridge formed on first plate, and a second ridge formed on second plate, and the first and second ridge protrude away from each other to form oxygen-containing channel between first and second ridge (sect. 0019); the first plate includes a first outer projection and first inner projection on opposite sides of the first ridge; the second plate includes a second outer projection and a second inner projection on opposite sides of the second ridge; and the first outer projection and first inner projection protrude oppositely to the first ridge, and the second inner projection and second outer projection protrude oppositely to the second ridge such that the first outer projection and second outer projection are in

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contact with each other, and the first inner projection and the second inner projection are in contact with each other (sect. 0035-0037). It teaches a seal for sealing the oxygen-containing gas channel between first ridge and second ridge (sect. 0036-0037).

Thus, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckmann et al., CA 2422926 A1, in view of Shindo, JP 11-16581.

Rejection of claims 2, 3, 5 drawn to a fuel cell.

Beckmann et al., teach a fuel cell as described above.

Beckmann et al., do not teach ridges extending around curved outer sections of plates; it does not teach electrode assemblies arranged along a circle concentric with a central axis of separators.

Shindo teach a fuel cell having ridges extending around curved outer sections of plates (Fig. 1). It teaches electrode assemblies arranged along a circle concentric with a central axis of separators (abstract),

Thus, it would have been obvious at the time the invention was made to insert the teachings of Shindo into the teachings of Beckmann et al., because Shindo teach a spiral-shaped fuel cell as a design choice.

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***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gyoten et al., EP 0951086 A2, teach a fuel cell comprising grooves on the surfaces of the separator to form the gas-flow paths. Doggwiler et al., U.S. Pat. No. 6,569,554 B1, teach a spiral-shaped fuel cell.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

